

JUL 12 1982

UNIVIS J 13

Form No. OSHA-20
4/16/79

Supersedes issue
of 7/1/76

U.S. DEPARTMENT OF LABOR
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
MATERIAL SAFETY DATA SHEET

DG-2C

SECTION I			
MANUFACTURER'S NAME Exxon Company, U.S.A.		EMERGENCY TELEPHONE NO. (713) 656-3424	
ADDRESS (Number, Street, City, State and ZIP Code) P. O. Box 2180 Houston, Texas 77001			
CHEMICAL NAME AND SYNONYMS Hydraulic Oil		TRADE NAME AND SYNONYMS UNIVIS J 13	
CHEMICAL FAMILY Petroleum Hydrocarbon		FORMULA Complex mixture of petroleum hydrocarbons.	
SECTION II HAZARDOUS INGREDIENTS			
		%	TLV (UNITS)
SECTION III PHYSICAL DATA			
BOILING RANGE IBP	435°F	SPECIFIC GRAVITY (H ₂ O=1)	0.86
VAPOR PRESSURE (mm Hg.) @ 20°C	<0.01	PERCENT VOLATILE BY VOLUME (%)	Negligible
VAPOR DENSITY (AIR@1)	>6	EVAPORATION RATE (n-BUTYL ACETATE=1)	<0.01
SOLUBILITY IN WATER	Negligible		
APPEARANCE AND ODOR Clear red color. Mild petroleum odor.			
SECTION IV FIRE AND EXPLOSION HAZARD DATA			
FLASH POINT (Method Used) Cleveland Open Cup 94°C (200°F)	FLAMMABLE OR EXPLOSIVE LIMITS (PERCENT BY VOLUME IN AIR)	LOWER LIMIT 1%	UPPER LIMIT 6%
EXTINGUISHING MEDIA Foam, dry chemical, CO ₂ , or water fog or spray.			
SPECIAL FIRE FIGHTING PROCEDURES Use air-supplied breathing equipment for enclosed areas. Cool exposed containers with water spray. Avoid breathing vapor or fumes.			
UNUSUAL FIRE AND EXPLOSION HAZARDS Do not mix or store with strong oxidants like liquid chlorine or concentrated oxygen.			

SECTION V HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

5 mg/m³ for oil mist in air. (OSHA Regulation 29 CFR 1910.1000)

EFFECTS OF OVEREXPOSURE

Prolonged or repeated skin contact may cause mild skin irritation.

EMERGENCY AND FIRST AID PROCEDURES

If ingested DO NOT induce vomiting, Call a Physician. In case of skin contact, wash thoroughly with soap and warm water. If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides.

SECTION VI REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	
INCOMPATIBILITY (Materials to avoid) Strong oxidants like: liquid chlorine, concentrated oxygen, sodium or calcium hypochlorite....			
HAZARDOUS DECOMPOSITION PRODUCTS			
Fumes, smoke, carbon monoxide, and sulfur oxides, in the case of incomplete combustion.			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Recover free liquid. Add absorbent (sand, earth, sawdust, etc.) to spill area. Keep petroleum products out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas.

WASTE DISPOSAL METHOD

Assure conformity with applicable disposal regulations. Dispose of absorbed material at an approved waste disposal site or facility.

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) Normally not needed. Use supplied-air respiratory protection in confined or enclosed spaces.

VENTILATION	LOCAL EXHAUST Use local exhaust to capture fumes and vapors.	SPECIAL Provide greater than 60 fpm hood or face velocity for confined spaces.
	MECHANICAL (General)	OTHER
PROTECTIVE GLOVES Use chemical resistant gloves if needed to avoid prolonged skin contact.		EYE PROTECTION Use splash goggles or face shield when eye contact may occur.
OTHER PROTECTIVE EQUIPMENT Use chemical resistant apron or other clothing if needed to avoid prolonged skin contact.		

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING

Keep containers closed when not in use. Do not handle or store near heat, sparks, flame or strong oxidants.

OTHER PRECAUTIONS

Avoid breathing oil mist. Remove oil-soaked clothing and launder before re-use. Discard oil-soaked shoes. Wash skin thoroughly with soap and water after handling.

FOR ADDITIONAL INFORMATION ON HEALTH EFFECTS CONTACT:

Director of Industrial Hygiene
(713) 656-2443

FOR OTHER PRODUCT INFORMATION CONTACT:

Manager, Marketing Technical Services
(713) 656-4929



Supersedes issue of 7-1-76

UNIVIS®

- Hydraulic Oils for Critical Applications
- High Viscosity Indices
- Low Pour Points
- Excellent Lubrication Characteristics
- Long-Lasting Oxidation Resistance

The UNIVIS oils exhibit a considerably reduced rate of viscosity change, as compared to ordinary petroleum oils, when subjected to temperature variations.

The UNIVIS oils are primarily used as hydraulic oils. The relatively uniform viscosity of each UNIVIS oil means more uniform functioning of the hydraulic system — whether the system is in a small door check, an aircraft, or a mammoth gun recoil mechanism.

In addition to their valuable viscosity features, UNIVIS oils are carefully refined for long-lasting oxidation resistance, excellent lubrication characteristics, and low pour points.

Grades

UNIVIS is available in 2 viscosity grades. The grades do not fall within International Standards Organization (ISO) viscosity ranges. For each product, the grade number is the approximate viscosity in centistokes at 40°C. UNIVIS J 13 contains a red dye to aid in leak detection.

Advantages of high V.I.

UNIVIS oils find their most important applications as hydraulic mediums in systems that must operate through wide ranges of temperature. Many such systems are sensitive to changes in viscosity of the hydraulic oil, depending for accuracy upon a fairly uniform viscosity. This is particularly true in equipment that operates outdoors. Conventional oils are handicapped by excessive thickening when cold, plus serious thinning at elevated temperatures.

With UNIVIS oils, absence of sluggishness at low temperatures is attained while leakage at high temperatures is minimized. This "all-weather efficiency" has enabled many operators to install UNIVIS in hydraulic systems and achieve year-round operation without the seasonal grade changes often required with conventional oil.

Other advantages

In addition to their high V.I.'s, the UNIVIS oils have the following desirable properties:

Oxidation stability is high for long life and resistance against sludging.

Low pour points permit use at extremely cold temperatures without danger of congealing.

Lubricity characteristics reduce friction and prevent wear of delicate hydraulic elements.

Applications

UNIVIS is particularly recommended for equipment that is subject to wide temperature variations owing to seasonal weather changes, flight conditions, or because of unusual operating conditions (for instance, hydraulic lift trucks that travel between hot and cold locations). The steadily growing list of such

Typical Inspections

The values shown here are representative of current production. Some are controlled by manufacturing specifications, while others are not. All of them may vary within modest ranges.

UNIVIS Grade	J 13	J 26
Gravity, °API	33.3	31.7
specific at 15.6/15.6°C (60/60°F)	0.859	0.867
Viscosity, cSt at 100°C	5.2	10.1
cSt at 54°C	10.2	20.0
cSt at 40°C	14.0	26.4
cSt at -18°C	101	195
cSt at -40°C	482	1225
cSt at -54°C	2250	6100
SSU at 210°F	43.5	60.1
SSU at 129°F	53.2	94.9
SSU at 100°F	75.1	131
SSU at 0°F	524	918
SSU at -40°F	2490	5756
SSU at -65°F	11 741	28 618
Viscosity index	374	403
Color, ASTM D 1500	red (dye)	0.5
Flash point, °C	93	99
°F	200	210
Pour point, °C	<-59	<-59
°F	<-75	<-75

applications includes aircraft hydraulic systems, hydrostatic transmissions, gun fire-control mechanisms, dash pots, and fluidic systems such as those found on numerically controlled lathes, automatic screw machines, etc.

The UNIVIS oils find use as lubricants as well as hydraulic fluids. There are many applications where increases in torque because of thickening lubricant cannot be tolerated. Fine instruments and other mechanisms where power input is limited are typical examples.

For equipment operating at a fairly constant temperature, or through a relatively narrow temperature range, the unusual V.I. qualities of UNIVIS generally are not required. Conventional hydraulic oils are usually recommended for such service.

UNIVIS J 13 has properties and performance features very similar to those required by US Military Specification MIL-H-5606A, but is not qualified against this specification.

Precautions

Oils and greases in contact with the skin can result in plugging of sweat glands and hair follicles or defatting of the skin. Under some conditions this may lead to skin irritation or dermatitis. Accordingly, good personal hygiene should always be practiced. Oils, greases, and other foreign materials should be removed from the skin promptly. UNIVIS oils are readily removed from the skin with waterless hand cleaners, followed by washing with soap, warm water, and a skin brush.

Similarly, soiled clothing should not remain in contact with the skin. UNIVIS can be removed from clothing by dry-cleaning with solvents or by washing with laundry detergents.

If UNIVIS comes in contact with the eyes, wash the eyes with fresh water until the irritation subsides.

For additional health and safety information, your Exxon representative can provide Material Safety Data Sheets on the UNIVIS products.



TECHNIGRAM

MARKETING TECHNICAL SERVICES EXXON COMPANY, U.S.A.

NEW GRADE DESIGNATIONS FOR INDUSTRIAL PRODUCTS

Exxon Company, U.S.A. has adopted the International Organization for Standardization (ISO) viscosity classification system. This system was published as ISO Standard 3448 and is expected to become the first universally accepted viscosity classification system. It is based on kinematic viscosity in centistokes at 40°C (104°F) and each grade covers a range of viscosities at that temperature. The ISO viscosity grades and the viscosity range for each grade are:

Grade	cSt at 40°C	Grade	cSt at 40°C
2	1.98 - 2.42	68	61.2 - 74.8
3	2.88 - 3.52	100	90.0 - 110
5	4.14 - 5.06	150	135 - 165
7	6.12 - 7.48	220	198 - 242
10	9.00 - 11.0	320	288 - 352
15	13.5 - 16.5	460	414 - 506
22	19.8 - 24.2	680	612 - 748
32	28.8 - 35.2	1000	900 - 1100
46	41.4 - 50.6	1500	1350 - 1650

The Exxon grade designation system for industrial lubricants has historically been based on viscosity in Saybolt Seconds Universal (SSU) at 210°F (99°C). In order to conform to the ISO viscosity system, the grade designations of Exxon-branded industrial lubricating oils, hydraulic oils, and gear oils will be changed, as indicated in the table on the reverse side of this TECHNIGRAM. This change will occur on July 1, 1976 and containers, invoices, etc. will show the new designations after that date. The former grade designation will also be shown for a period of one year.

The branded products listed in the table are the only ones being changed. In some instances, the viscosity of a particular product grade falls between ISO grades and, in this case, the grade designation represents the approximate viscosity in centistokes at 40°C (104°F). These products are identified by a footnote as not falling within an ISO viscosity grade.

The typical viscosities of some products were adjusted slightly to place them within ISO viscosity grades. However, viscosity adjustments have been minor and will not affect product performance characteristics. Complete typical inspections for the new grades are contained in the Product Data Sheets that are available from the Exxon representative.

EXXON PRODUCT GRADE CHANGES EFFECTIVE JULY 1, 1976

Former Name & Grade	New Name & Grade	Former Name & Grade	New Name & Grade
AROX EP 45	AROX EP 46	NUTO 43	NUTO 32
AROX EP 65	AROX EP 150	NUTO 47	NUTO 46
		NUTO 53	NUTO 68
CANTHUS 150	¹ CANTHUS 550	NUTO 63	NUTO 100
CANTHUS 181	CANTHUS 680	NUTO 76	NUTO 150
CANTHUS 210	CANTHUS 1000	NUTO 93	NUTO 220
		NUTO 113	NUTO 320
		NUTO 146	NUTO 460
CORAY 37	CORAY 15		
CORAY 40	CORAY 22	NUTO H 44	NUTO H 32
CORAY 42	CORAY 32	NUTO H 48	NUTO H 46
CORAY 45	CORAY 46	NUTO H 54	NUTO H 68
CORAY 50	¹ CORAY 60	NUTO H 64	NUTO H 100
CORAY 55	CORAY 100		
CORAY 65	CORAY 150	SPINESSTIC 34	SPINESSTIC 10
CORAY 70	¹ CORAY 170	SPINESSTIC 38	SPINESSTIC 22
CORAY 80	CORAY 220		
CORAY 90	CORAY 320	SURETT FLUID 30	² SURETT FLUID 4k
		SURETT FLUID 50	² SURETT FLUID 6k
CYLESSTIC 300	CYLESSTIC 1500		
		SURETT N 350	² SURETT N 5k
CYLESSTIC TK 140	CYLESSTIC TK 460	SURETT N 850	² SURETT N 26k
CYLESSTIC TK 180	CYLESSTIC TK 680	SURETT N 1550	² SURETT N 80k
CYLESSTIC TK 210	CYLESSTIC TK 1000	SURETT N 3050	² SURETT N 270k
ENMIST EP 00	ENMIST EP 22	TERESSTIC 43	TERESSTIC 32
ENMIST EP 1	ENMIST EP 100	TERESSTIC 47	TERESSTIC 46
ENMIST EP 2	ENMIST EP 150	TERESSTIC 52	TERESSTIC 68
ENMIST EP 3	ENMIST EP 220	TERESSTIC 56	¹ TERESSTIC 77
ENMIST EP 5	ENMIST EP 460	TERESSTIC 65	TERESSTIC 100
		TERESSTIC 85	TERESSTIC 150
ESSTIC 42	ESSTIC 32		
ESSTIC 50	ESSTIC 68	TERESSTIC EP 44	TERESSTIC EP 32
ESSTIC 65	ESSTIC 150	TERESSTIC EP 53	TERESSTIC EP 68
FAXAM 35	FAXAM 15	TERESSTIC N 75	TERESSTIC N 150
FAXAM 40	FAXAM 22	TERESSTIC N 86	TERESSTIC N 220
FAXAM 50	FAXAM 46		
		UNIVIS J 43	¹ UNIVIS J 13
FEBIS K 53	FEBIS K 68	UNIVIS J 58	¹ UNIVIS J 26
FEBIS K 73	FEBIS K 220		
		UNIVIS P 38	¹ UNIVIS P 12
IMOL S 220	IMOL S 46	UNIVIS P 48	UNIVIS P 32
MILLCOT K 65	MILLCOT K 220	ZERICE 40	ZERICE 22
		ZERICE 45	ZERICE 46
		ZERICE 50	ZERICE 68

¹Product is not an ISO viscosity grade. Grade numbers shown represent approximate viscosity in centistokes at 40° Celsius.

²k is the abbreviation for kilo, the metric term for thousand. Grade numbers shown are the approximate viscosities in centistokes at 40° Celsius.